

REMARKS

Claims 1-5, 7-10 and 13-23 are pending in the application, of which claims 8-10 are withdrawn.

Claims 1 and 17 have been amended to incorporate a limitation from dependent claim 18, with respect to the definition of the X group, which definition is also supported on page 8, lines 23-25, page 9, lines 20-22, and page 10, lines 13-15. Entry of this amendment is requested because it merely responds to a change in the grounds of rejection in the Final Rejection of February 13, 2009. According to 37 CFR 1.116, amendments, after final action, touching the merits of the application may be admitted upon a showing of good and sufficient reasons why the amendment is necessary and was not earlier presented. Also, Applicants submit that entry of the amendment is proper on the grounds that the amendment clearly places the application in condition for allowance.

Alternatively to entry of the amendment, Applicants respectfully request that the Examiner withdraw the rejection of finally rejected claims on the grounds that new facts or reasons are presented such as to convince the Examiner that the previously rejected claims are in fact allowable. Finally, Applicants respectfully submit that final rejection was not proper and should be withdrawn, because the Examiner introduced a new ground of rejection that was not necessitated by Applicant's amendment of the claims. MPEP 706.07(a).

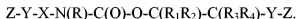
Amendments to, cancellation of, and additions to, the claims, as set forth above, are made in order to streamline prosecution in this case by limiting examination and argument to certain claimed embodiments that presently are considered to be of immediate commercial significance. Amendment or cancellation of the claims is not in any manner intended to, and should not be construed to, waive Applicants' right in the future to seek such unamended or cancelled subject matter, or similar matter (whether in equivalent, broader, or narrower form) in the present application, and any continuation, divisional, continuation-in-part, RCE, or any other application claiming priority to or through the present application, nor in any manner to indicate an intention, expressed or

implied, to surrender any equivalent to the claims as pending after such amendments or cancellations.

Reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

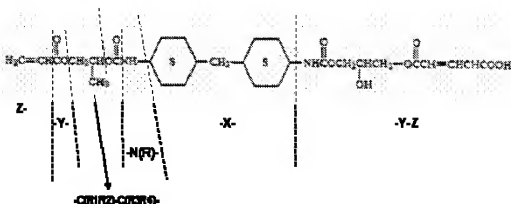
1. **Rejection of claims 1-5, 7-10, and 13-22 under 35 U.S.C. §102(b) as anticipated by Hung et al. (U.S. 4,849,321), hereafter "Hung".**

The Examiner states that Hung discloses a UV curable urethane compound and composition in col. 5, 6, and 13-14 that anticipates the instant claims. The Office Action bases this on an interpretation of Applicants' formula I which can be represented as follows:

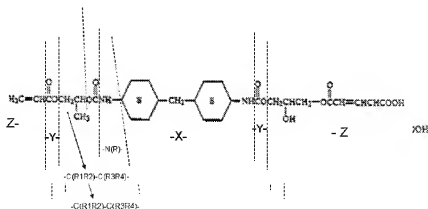


(12/13/2009 Office Action, page 2, section 5.)

The Applicants note, however, that the U.S.P.T.O. has provided two different analyses of the structure in Hung. In the Office Action of September 15, 2008, the Office Action provided the following analysis of Hung's structure:



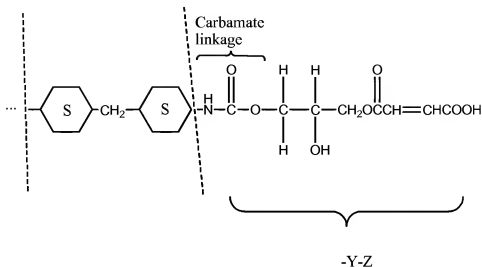
In contrast, in the Final Office Action of December 13, 2008, the Office Action provided the following analysis of Hung's structure.



Applicants note that the Office Action has changed the position of the lines defining the X group.

Applicants appreciate, however, the detailed analysis provided by the Examiner and have consequently clarified the structural differences of the present compounds from those disclosed by Hung as currently interpreted in the last Office Action. As now amended, claim 1 recites that X is a substituted or unsubstituted organic monovalent radical that is an alkyl, cycloalkyl, or alkyl cycloalkyl group or is a substituted or unsubstituted organic divalent organic radical that is an alkanediyl, cycloalkanediyl, or alkanecycloalkanediyl group.

Based on the amended definition of the X group, Applicants submit that the right side of Hung's structure must now be interpreted as follows:



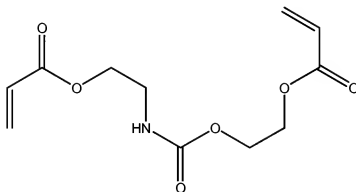
Accordingly, it is respectfully submitted that the -Y-Z group on the right side in Hung's formula does not meet independent claim 1 as currently amended. Based on the current amendment, the -Y-Z group in Hung's formula involves a carbamate group, and not a functional group that (as clarified by the amendment to claim 1) has the formula of an ether, carboxylate, carbonate, phosphate, phosphonate, phosphite ester, or sulfonate group. Since Hung's Compound III does not teach any of the foregoing groups, it does not anticipate the present claims.

Specifically, the -Y-Z group on the right side of the illustrated structure of Compound III from Hung is linked to -X- using a carbamate linkage. More specifically, Y in Hung's Compound III is a carbamate, not one of the functional groups required by the present claims.

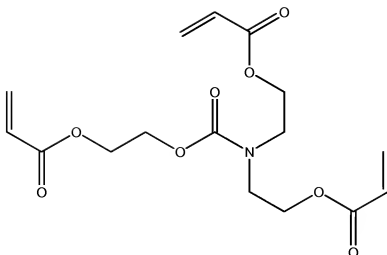
Furthermore, claim 20 states that the Z group is a vinyl, 1-methylvinyl, 1-ethylvinyl, propene-1-yl, styryl, cyclohexenyl, endomethylene-cyclohexyl, norbornenyl or dicyclopentadienyl group, as supported at least by page 13, lines 12-16. Also, claim 21 specifies that the Z group is a vinyl group. Clearly, Hung does not teach the structure of claims 20 and 21, because Hung's compound contains a $-\text{CH}=\text{CHCHCOOH}$ end group.

Furthermore, claim 23 states that the compound is selected from the group consisting of N-(2-acryloyloxyethyl)-2'-acryloyloxyethyl carbamate, N-(2-acryloyloxyethyl)-3'-acryloyloxypropyl carbamate, N-(2-acryloyloxyethyl)-4'-acryloyloxybutyl carbamate, 1,2-bis(N-(2-acryloyloxyethyloxycarbonyl-amino)ethane, 1,3-bis(N-(2-acryloyloxyethyloxycarbonyl-amino)propane, 1,6-bis(N-(2-acryloyloxyethyloxycarbonyl-amino)hexane, 1,3-bis(N-(2-acryloyloxyethyloxycarbonylamino-methyl)cyclohexane, and N,N-bis(2-acryloyloxyethyl)-2'-acryloyloxyethyl carbamate.

The formulas for these eight compounds, respectively Compounds I-1 to I-8 in the present specification, are not taught by Hung. For example, the first and last specified compounds (I-1 and I-8) are represented by the following formulas:



N-(2-acryloyloxyethyl)-2'-acryloyloxyethyl carbamate



N,N-bis(2-acryloyloxyethyl)-2'-acryloyloxyethyl carbamate

In such structures, it can be seen that n is 1, Z is a vinyl group, Y is a carboxylate group, X is an ethyl group, R is either hydrogen (in the first structure) or an organic radical that is another Z - Y - group (in the second structure), and R^1 to R^4 are hydrogens.

Moreover, the teachings of Hung are contrary to the purpose of the present invention. Compound III is synthesized from a polyisocyanate, namely the Compound I on the left side of column 5. This produces the carbamate functional group in Compound III. In contrast, as explained in the original application, the present invention is directed to novel compounds which contain urethane groups, which can be cured by UV radiation or electron beams, which have at least the same advantageous level of technological properties as the existing urethane acrylates, and which can be prepared without the use of polyisocyanates. The numerous examples demonstrate that compounds of the present invention can be produced in a purity greater than 99%, which compounds were found to be outstandingly suitable for preparing thermally curable and UV-curable (dual-cure) clearcoat materials.

In view of the above, Applicants respectfully assert that the present claims are patentable over Hung under 35 U.S.C. 102(b). Withdrawal of this rejection is respectfully requested.

Response to Arguments

The Office Action states that the definition of X in the claims is broad and it can be an amino substituted organic radical. However, according to the grounds of the rejection in the Office Action of September 15, 2008, the rejection interpreted the amino group to be part of the -YZ moiety, not part of the X structure. As explained above, in response to the Examiner's new interpretation of Hung, Applicants have amended claim 1 to clarify that such amino group is indeed part of the -YZ moiety, not the X structure. Furthermore, based on the definition of X in the present amendment, any substitution on the X group would not affect the bond linkages to the -YZ moiety, for example a "cycloalkanedyl" radical does not contain hydrogens for substitution at the bond linkages.

It is further noted that the Examiner's "Response to Argument" did not respond to the invention of claims 18, 20, 21, and 23, which are limited to compounds that are not taught or suggested by Hung. In fact, Hung teaches away from the compounds of previous claims 18, 19, 20, 21, and 23.

CONCLUSION

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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